

## Mobile Basics (cont'd)

### Transmit Mode

1. Verify which group you are on by pressing the **#** key on mic keypad.
2. To switch groups, press the **GRP** (or 4) button in, dial the **CH** knob to the Group number you want, and press **GRP** (or 4) button back off. **To see the group label, press the GRP button once to display group number and then press the GRP button again to display group name.**
3. Switch **CH** knob to correct repeater or net channel.
4. Hold **mic** at an angle and 2-3 inches from mouth.
5. Push the Push-to-Talk (**PTT**) switch on left-hand side of mic (**red transmit light** will light on display of radio), wait ½ second, speak into **mic**, then release **PTT** when finished talking.

### Scanning

Setting up or Deleting Channels from the Scan List:

1. Disable **Scan** function by pressing **SCN** (or 2) button in (front panel display should not be blinking).
2. **To add a channel to the scan list**, rotate **CH** knob on front panel to desired channel to scan and using the mic keypad, press the **ENT** button. (Repeat Step 2 to add other channels.)
3. **To remove a channel from the scan list**, rotate **CH** knob to desired channel to remove and using the mic keypad, press the **CLR** button. (Repeat Step 3 to remove other channels)
4. When finished, enable **Scan** by pressing **SCN** (or 2) button in.

### Priority Scan

**Priority when activated will sample the channel you select more often than other channels in the scan list and will lock on traffic on the priority channel over all others it might be receiving. The radios have been set up to TRANSMIT ON PRIORITY on Groups 2-8.**

1. To set priority channel, make sure **SCN** (2) and **PRI** (3) buttons on control head are off. Turn channel knob to desired priority channel and press **PRI** key on the mic keypad.
2. **Activate priority scan** press **PRI** (3) key on control head in.
3. **Deactivate priority scan** press **PRI** (3) key on control head in.

Note: When Priority Scan is activated on groups **1** and **9-15**, it only serves to sample that channel more often than others.

When Priority Scan is activated on groups **2-8**, it automatically goes to the priority channel (shows on the display) and if you press the mic PTT, it will TX on the priority channel even when your channel selector is on a different channel. To TX on the channel on the channel selector, just press the **PRI** (3) button and press the mic PTT.

## Troubleshooting Your Mobile Radio

### \* Radio Won't Turn On

- a. Make sure the yellow blade fuse is in the fuse holder under the hood of your vehicle. (*Pulled out of vehicles being stored or not started for long periods in the winter*).
- b. Press the Reset Button on your ChargeGuard. (*Located under the dash of your vehicle – should hear an audible click as it resets indicating that there is power going to the ChargeGuard*).
- c. Make sure the power leads (black/red) with white connector going to the base unit of the radio are still plugged in and that no wires are pulled loose.

If the radio continues to fail, open a service ticket through CHD so that a radio technician can schedule repair on your radio.

### \* Loud Continuous Squelch

- a. Check to make sure your **MON** (1) button is not selected

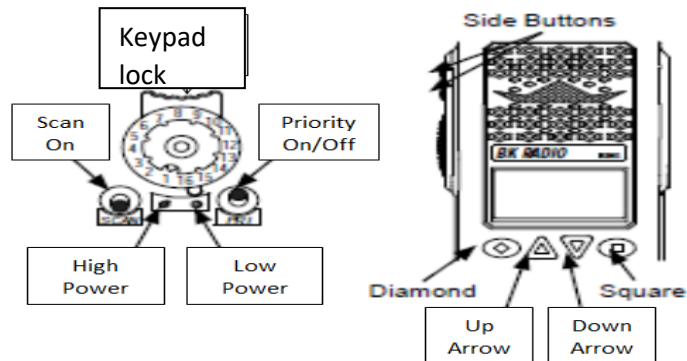
### \* Radio not Receiving

- a. Press the **SQL** (5) button in to see if you get audible squelch on your radio (*Indicates whether or not the internal speaker is working*).
- b. If you have an **external speaker** attached to the back of your control head, remove the connector going into the control head and see if there is audible squelch (*Indicates whether or not the external speaker is working*).
- c. Make sure the antenna is on the truck.
- d. Make sure the connector is seated tightly on the base unit behind or under the back seat of your vehicle. (**Follow the cables from the control head to the base unit if you aren't sure where it's located.**)
- e. Try transmitting from your portable on a work channel to see if your mobile radio is receiving it. Make sure you are scanning that work channel on your mobile or dial the channel knob to the work channel. (*Indicates problems that need to be looked at by a radio tech*)

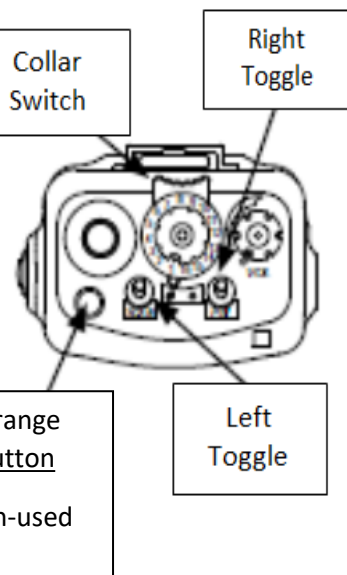
### \* Radio not Transmitting

- a. Key the mic – make sure display does not show "**low volts**". If it does, start vehicle and try again.
- b. Make sure **antenna** is on the truck.
- c. Make sure the **connector** is seated tightly on the base unit behind or under the back seat of your vehicle.
- d. Try transmitting from your mobile and listen on your portable (*This tests the mic and radio at the same time*).

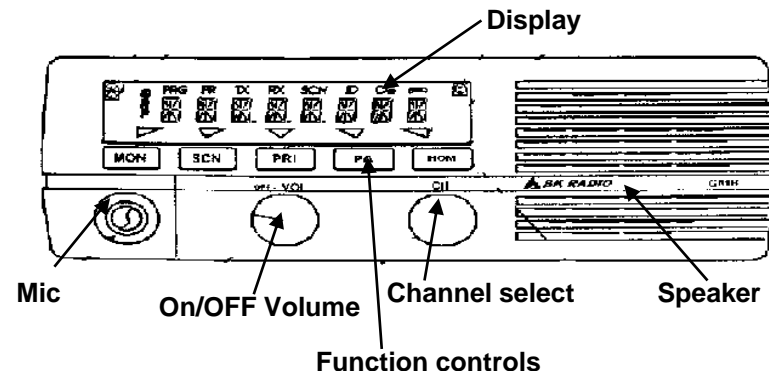
## KNG Button Functions



Collar Switch	Right	Keypad Lock
	Left	Keypad Unlock
Left Toggle	Up	Channel Scan On
	Dwn	Channel Scan Off
Right Toggle	Up	Priority Scan On
	Dwn	Priority Scan Off
Orange Button	Un-used	
Side Top	Back Light	
Side Bottom	Squelch Adjust	
Diamond	Picklist TX	
	CsCSS	
Up Arrow	Hi/Low Power	
Down Arrow	Menu	
Square	Zone Select	
* Key	Monitor	
# Key		



## Mobile Radio Controls and Switches



**Mic** – Connection for Mic, **keypad** on Mic is used to change groups and alter scan lists

**On/Off Vol** – Radio power and volume adjust

**Function controls** –

**MON** – used to unsquelch radio

**SCN** – Scan enable and disable

**PRI** – Priority enable and disable

**PA** – Public address (no speakers on trucks)

**HOM** – Used to enter into programming mode

**Channel select** – Channel/frequency select knob

**Speaker** – Receive audio speaker

**Display** – Alphanumeric display, displays selected channel

### Mobile Basics

#### Receive Mode

1. On the front panel, turn **OFF-VOL** knob clockwise (or press in on DMH), press the **MON** (or 1) button in and set the volume to desired level. Depress the **MON** button to "quiet" radio, volume is set.
2. Turn **CH** knob clockwise (cw) or counter clockwise (ccw) to desired channel.

#### Priority Scan (cont'd)

Look under *Portable Basics* for examples of how Priority Scan is useful.

#### Group Scanning

This feature is no longer active on any Bighorn radios. If it turns on somehow, press FCN key until it comes to group scan, then press PRI key to turn it off (not flashing), press ENT.

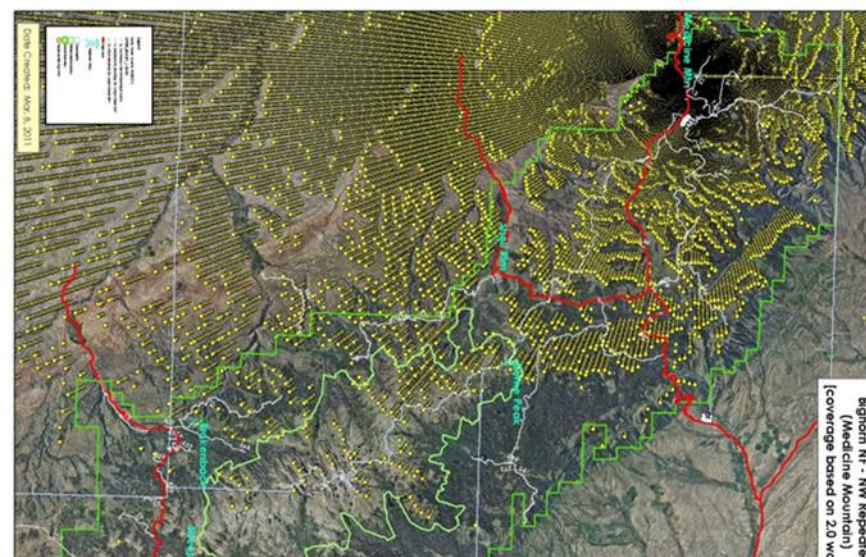
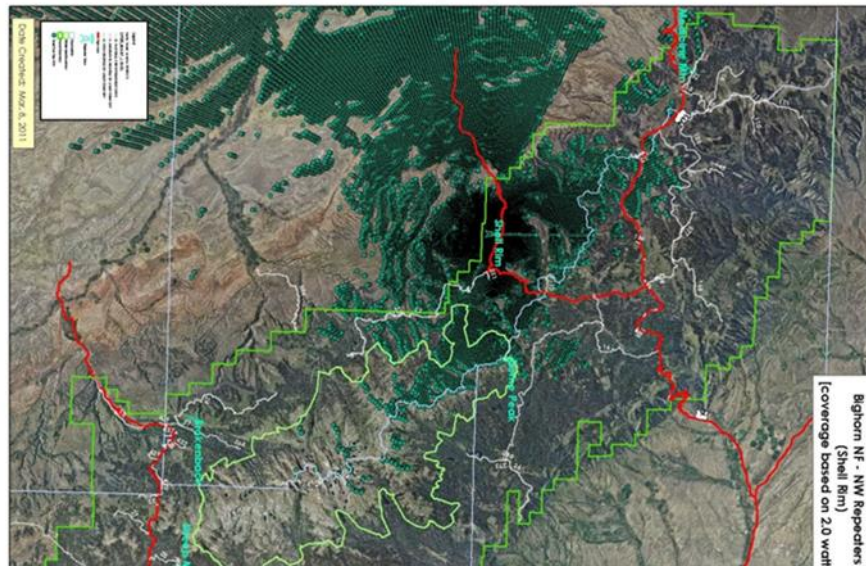
#### Squelch

1. Press the **SQL** (or 5) button in on front panel, then turn the **CH** knob clockwise to increase squelch or counter clockwise to decrease squelch.
2. Press the **SQL** button to leave the squelch mode.
3. To set to factory squelch level, press and hold the **SQL** (or 5) button in on the front panel until you hear an audible beep.

## MEDICINE WHEEL RD (NORTHWEST)

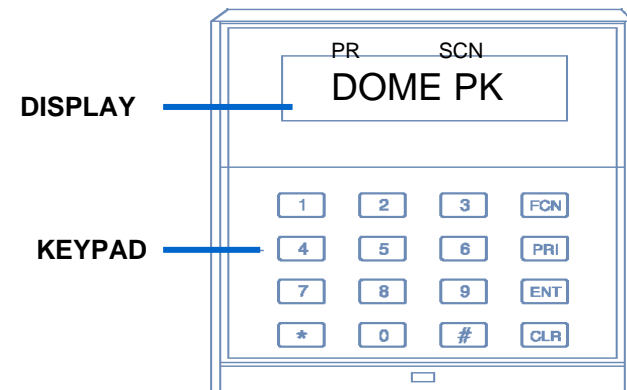
•**Shell Rim Repeater** serves the area in and around Shell Canyon/Highway 14 and portions of the area going up FS Rd 17. It can be answered from the following sites: Shell Falls VC; Shell WC; Greybull, Sheridan, and Buffalo Offices; and Cody Dispatch Center.

•**Medicine Mountain Repeater** serves the Medicine Wheel District and can be answered from the following sites: Porcupine and Burgess WCs; Greybull, Sheridan, and Buffalo Offices; Burgess Junction and Shell Falls VCs; and Cody Dispatch Center.



## DPH/GPH Portable Displays

### Handheld radio (Display/Keypad)



**Display** – Alphanumeric display shows what channel is selected from Channel select knob on top of handheld radio

**Keypad** – Multifunction use

Keys (1 – 8) use these keys to change groups

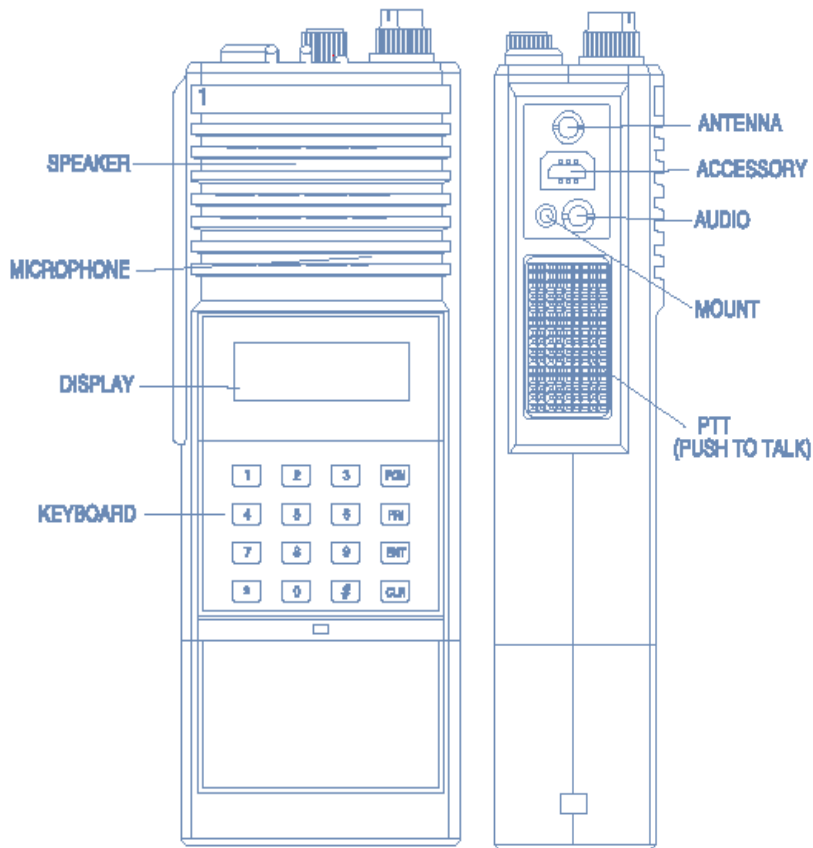
**FCN** – Used in the programming mode

**PRI** – Used to program channel in the priority mode

**ENT** – Used for changing groups and entering channels in scan mode

**CLR** – Used for deleting channels out of the scan mode

## Handheld radio (front view)



**Speaker** – Receive audio

**Microphone** – Used in transmit mode, speak into microphone to transmit voice

**Display** – Alphanumeric display shows what channel is selected

**Keyboard** – Multi-user functions

**Antenna** – Used for an external antenna

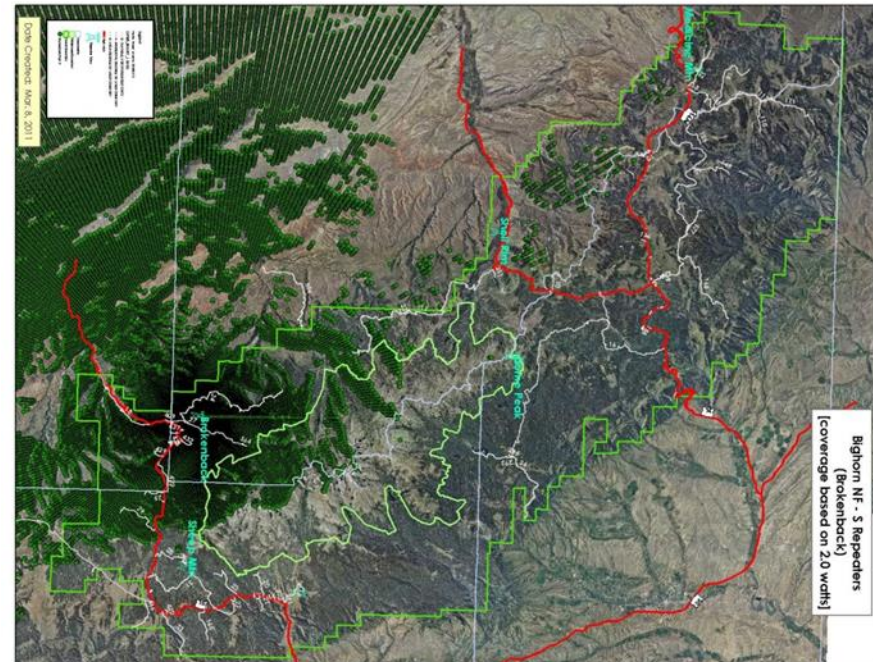
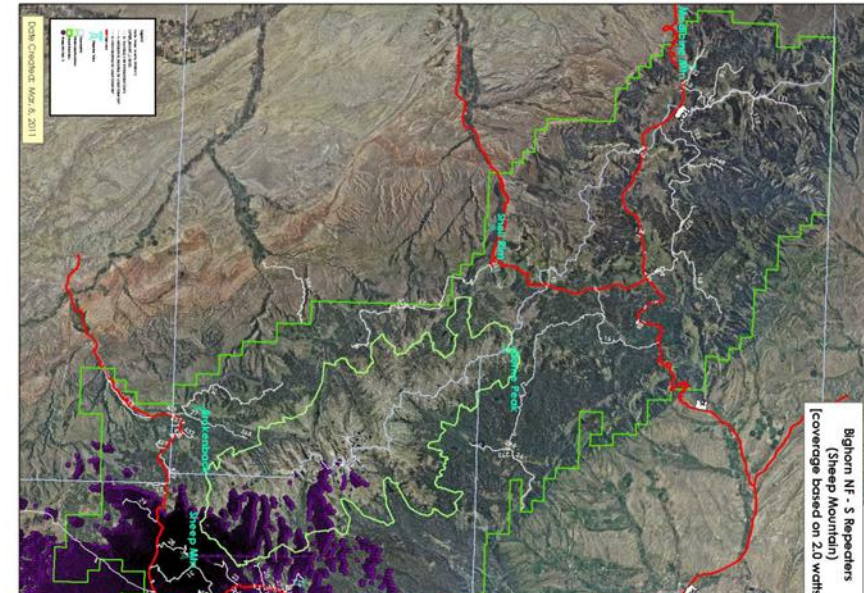
**Accessory** – Used for extended Speaker/Mic

**Audio** – Used for extended Speaker/Mic

**Mount** – Fastener for extended Speaker/Mic

**PTT** – Keys radio when depressed

## Sheep Mtn and Brokenback Repeater Coverage



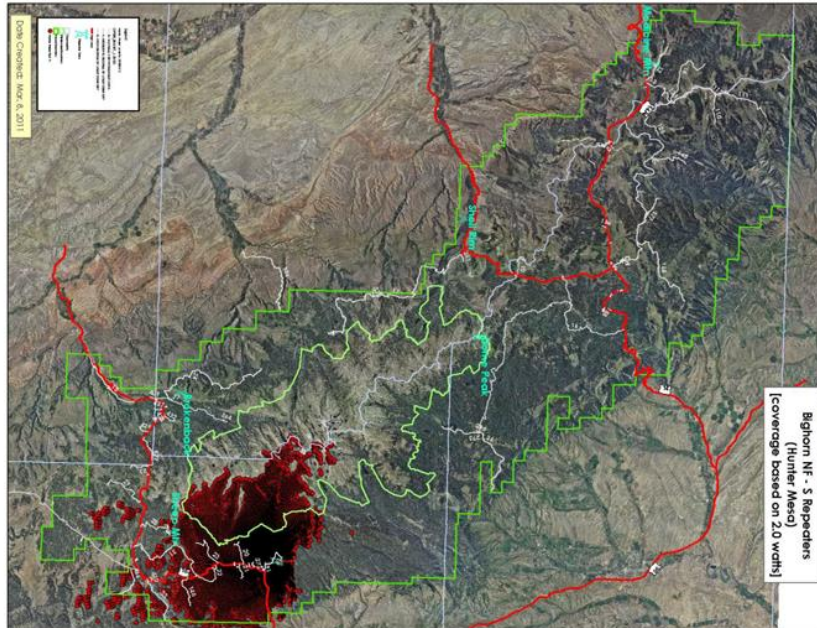
## **POWDER RIVER RD (SOUTH)**

•**Hunter Mesa Repeater** serves the southeastern portion of the Forest from the Highway Maintenance Camp on Highway 16 north to Sheridan County. It can be answered from the following sites: Hunter WC; Greybull, Sheridan, and Buffalo Offices; and Cody Dispatch Center.

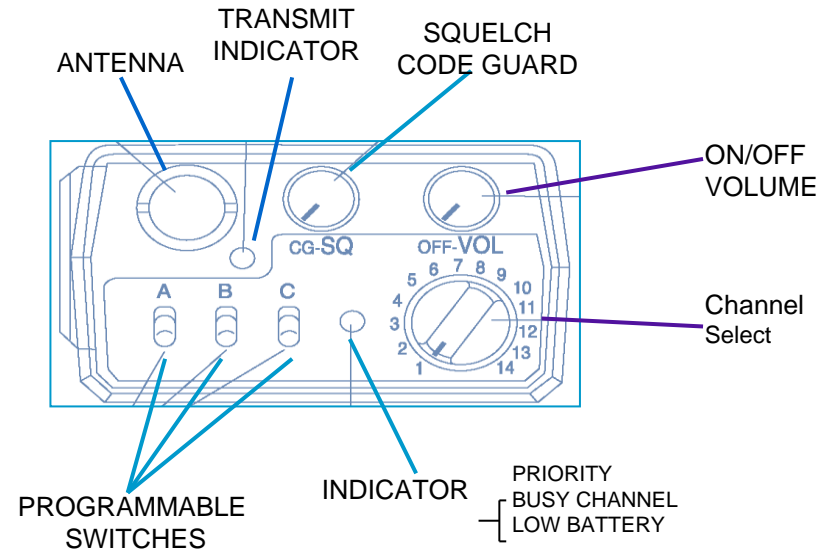
•**Sheep Mountain Repeater** covers the Southeast side of the Forest in the Caribou, Crazy Woman, Hazelton, and east Powder River Pass areas. It can be answered from the following sites: Hunter and Tyrrell WCs; Greybull, Lovell, Sheridan, and Buffalo Offices; and Cody Dispatch Center.

•**Brokenback Repeater** covers from Powder River Pass to the west, down to Leigh Creek on Highway 16, and north to Medicine Lodge Creek. It also covers a huge portion of the Big Horn Basin. It can be answered from the following sites: Tyrrell WC, Greybull, Paintrock, Sheridan, and Buffalo Offices; and Cody Dispatch Center.

### **Hunter Mesa Repeater Coverage**



### **Handheld radio (top view)**



**Antenna** – Antenna connector

**Transmit Indicator** – Red light illuminates when in the transmit mode

**Squelch** – “Quiets” radio sets, level of the receiver sensitivity

**On/Off Volume** – Power and volume, turns radio on/off adjusts volume

**Channel Select** – Changes channel/frequency

**Indicator** – Multifunction indicator will illuminate when receiving signal

**Programmable switches** –

A – High/Low power switch, when in High power radio transmits 5 Watts in Low power radio transmits 2 watts

B – Scan on/off switch

C – Priority Scan on/off switch

## Portable Basics

### Receive Mode

1. Turn **Off/VOL** knob clockwise ½ turn.
2. Turn **CG-SQ** knob clockwise until noise is heard on speaker, then turn knob counterclockwise until radio “quiets” (no audio heard on speaker).
3. Turn **channel** select knob to desired channel.

### Transmit Mode

1. Verify which group you are on by pressing the **#** key on the keypad. **To see the group label, press and hold the # key.**
2. To switch groups, press the **#** key followed by the numeric keys of the group you want to switch to, then press **ENT** (i.e. **#05 ENT**), for group 5. If keypad doesn't work, press and hold **FCN** key until display reads **UNLOCKED**. This will unlock the keypad.
3. Switch **channel** knob to correct repeater or net channel.
4. Hold **mic** at an angle and 1-2 inches from mouth.
5. Push the Push-to-Talk (**PTT**) switch in (**red transmit light** will light on top of radio), wait ½ second, speak into **mic**, then release **PTT** when finished talking.

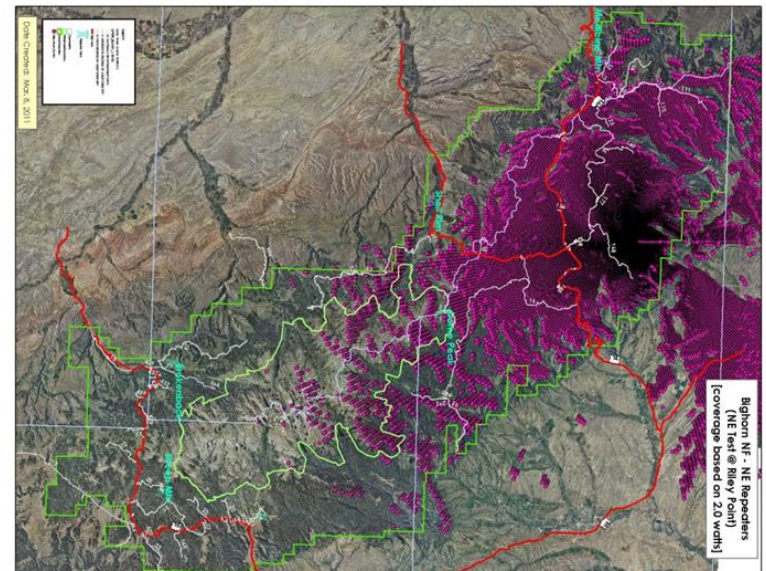
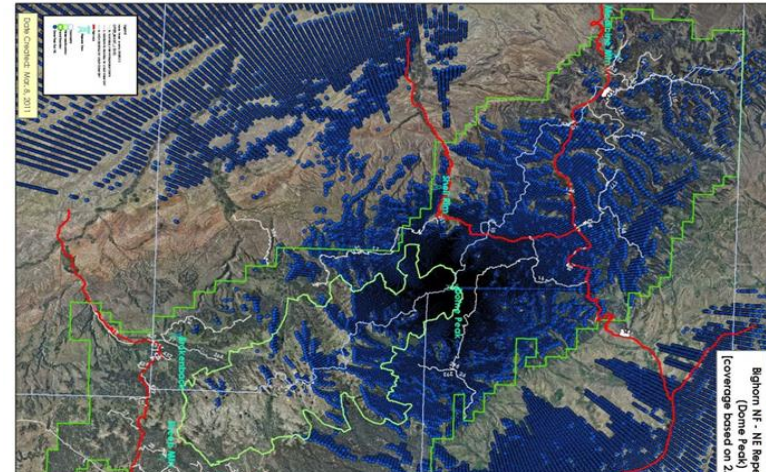
### Scanning

Setting up or Deleting Channels from the Scan List:

1. Disable **Scan** function by pressing **toggle switch B** toward the front of the radio (front panel display should not be blinking).
2. **To add a channel to the scan list**, rotate **Channel** knob to desired channel to scan and press the **ENT** button on the front keypad. (Repeat Step 2 for other channels you wish to add to the scan list)
3. **To remove a channel from the scan list**, rotate **Channel** knob to desired channel to remove and press the **CLR** button on the front keypad. (Repeat Step 3 for other channels you wish to delete from the scan list)
4. When finished, enable **Scan** by pressing **toggle switch B** or **SCN** to the back of the radio.

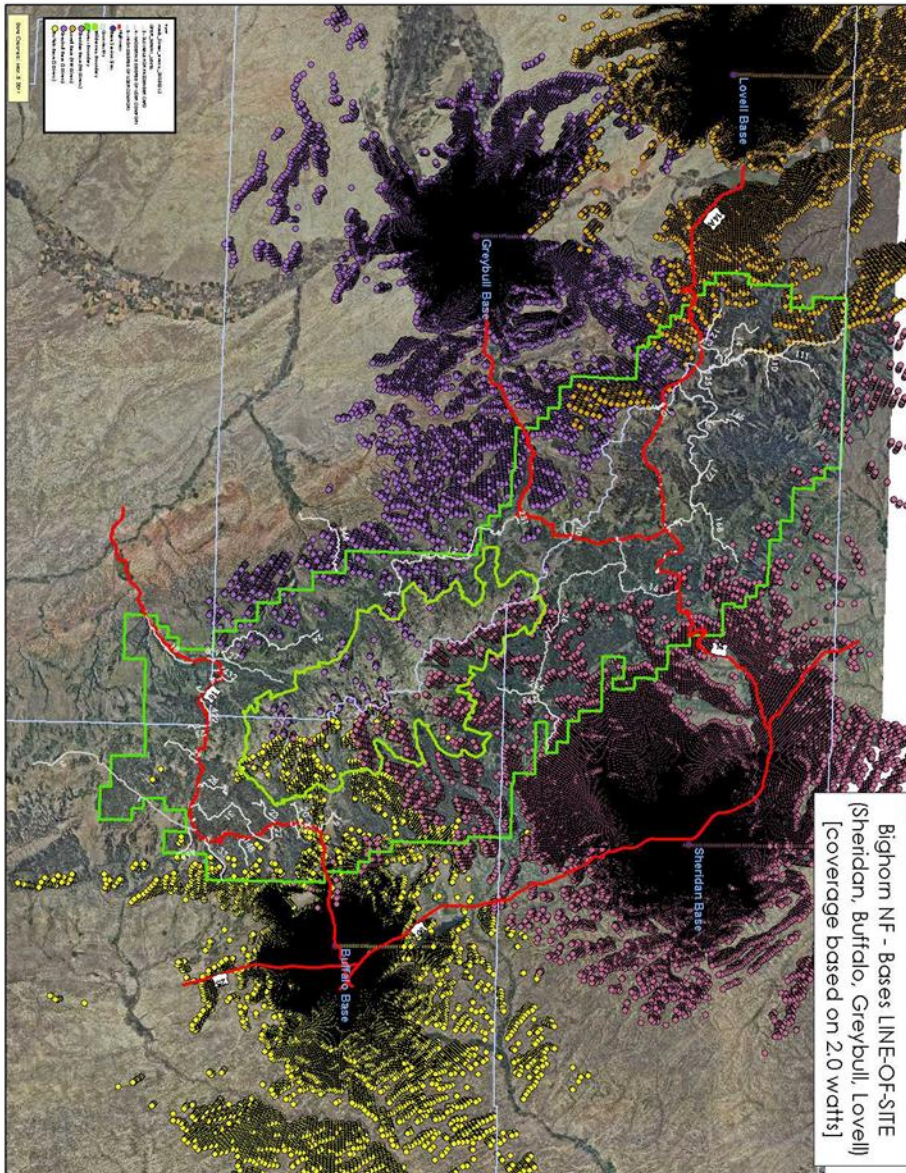
## TONGUE RD (NE REPEATERS)

- **Dome Peak Repeater** covers the northeast side of the Forest on the Tongue District. It can be answered from the following sites: Burgess, Big Goose, Shell, and Sheridan WCs; Burgess Junction VC; Greybull, Lovell, Sheridan, and Buffalo Offices; and Cody Dispatch Center.
- **Dry Fork Repeater (was Riley Pt)** covers Lick Creek, Dry Fork, and parts Little Horn areas on the Tongue District. It can be answered from the following sites: Big Goose, Burgess, Porcupine, and Sheridan WCs; Burgess VC; Greybull, Sheridan, and Buffalo Offices; and Cody Dispatch Center.



## LINE-OF-SITE COVERAGE FROM BASE STATIONS

This map depicts the range of coverage the user can expect from a handheld radio reaching back to the district offices/SO on NE Direct (Sheridan), NW Direct (Greybull), and S Direct (Buffalo & Greybull).



## Portable Basics (cont'd)

### Priority Scan

**Priority when activated will sample the channel you select more often than other channels in the scan list and will lock on traffic on the priority channel over all others it might be receiving. The radios have been set up to TRANSMIT ON PRIORITY on Groups 2-8.**

1. To set priority channel, make sure SCN (B) and PRI (C) switches are towards the front of the radio. Turn channel knob to desired priority channel and press PRI key on the keypad.
2. **Activate priority scan** press **toggle switch C** toward back of radio.
3. **Deactivate priority scan** press **toggle switch C** toward front of radio.

Note: When Priority Scan is activated on groups **1** and **9-15**, it only serves to sample that channel more often than the others.

When Priority Scan is activated on groups **2-8**, it automatically goes to the priority channel (shows on the display) and if you press the PTT, it will TX on the priority channel even when your channel selector is on a different channel. To TX on the channel on the channel selector, just press the PRI (C) toggle switch to the front of the radio and press the PTT.

### Examples of how Transmit on Priority is helpful:

Road crew works primarily on Work 1, but still need to be monitoring and occasionally talk on a local repeater such as Sheep Mtn. In Group 3, they would set their priority channel to CH 6 (Work 1), and change the channel knob to CH 3 (Sheep Mtn). They turn on Priority Scan (toggle switch PRI [C] to back of radio), the display says Work 1. They can operate on Work 1 just by hitting the PTT. If they need to talk on Sheep Mtn, they just turn toggle switch PRI [C] off (toward front of radio).

This combination works very well with Fire I/A groups with Air-to-Ground and repeater channels.

### Group Scan

Group Scan is no longer turned on as an option on the Bighorn radios.

### Hi/Low Power

**Toggle Switch A** toward back of radio is **LOW** (2 Watts) power, toward the front of the radio is **HIGH** (5 Watts) power.

## Troubleshooting Your Portable Radio

### \* Loud Continuous Squelch

- a. Turn your **squelch knob** counter-clockwise until it quiets but don't turn it to where it clicks off.
- b. Make sure you are not scanning a frequency such as NOAA Weather that transmits continuously.
- c. You may be in an area that has high interference, change locations and see if it goes away.

### \* Radio not Receiving

- a. Turn the **squelch knob** up (clockwise) to see if you get audible squelch on your radio (Indicates whether or not the internal speaker is working).
- b. If you have an **external mic** attached to the side of your radio, remove it, turn the squelch knob up and see if you hear audible squelch on your radio (Indicates whether or not the speaker on the external mic is working).
- c. Make sure the antenna is on the radio and not damaged.
- d. Try transmitting from your mobile on a work channel to see if your portable radio is receiving it. Make sure you are scanning that work channel on your portable or dial the channel knob to the work channel. (Indicates problems that need to be looked at by a radio tech).

### \* Radio not Transmitting

- a. Press the PTT on the side of the radio – (there should be a red TX light that comes on when you transmit).
- b. Make sure you have a good, charged battery (if the red TX light goes on then off while pressing the PTT, you have a low battery. Your display will probably be showing "low volts" also).
- c. Make sure the antenna is in good condition and screwed in (**snug but not torqued**) into the antenna port on the radio.
- d. Try transmitting from your portable and listen on your mobile (This tests to make sure you are actually transmitting out).
- e. Move to a different location (maybe you are just not hitting the repeater).

If the radio continues to fail, open a service ticket through CHD so that a radio technician can schedule repair on your radio.

If appropriate communications cannot be established, mitigate the problem using one of the following suggestions:

1. Leave the area.
2. Establish hourly check-ins from a point that has communications
3. Establish a human repeater (2<sup>nd</sup> person to stay in coverage).
4. Plan in advance to have a portable repeater set up in the area
5. You may need to move one direction or another (maybe as little as 1 foot), or get to higher elevation. See Radio Troubleshooting.
6. Face in the direction of the repeater.
7. **BOTTOM LINE – USE COMMON SENSE!**

## EMERGENCIES:

All **EMERGENCY** traffic will be handled through **Cody Dispatch Center** with the Sheridan Supervisor's Office acting as a backup.

Any "**Flight-for'Life**" coordination will be done by Cody Dispatch Center or Sheridan Supervisor's Office acting as a backup.

Make sure that Cody Dispatch Center notifies the helicopter's dispatch that the frequency to be used between **personnel on the ground and the helicopter, such as VMED 28 or Wyoming State Mutual Aid frequency.**

## COVERAGE MAPS

The following are small versions of the radio coverage maps for each repeater:

***Not every location on the Forest is covered by radio communications.*** There are some locations that are obstructed from direct line-of-sight to repeaters and other radios. These maps display where the radios should reach, shown by dots on the maps. Maps are available in Forest Offices and on the web.

These coverages are based on 2 Watt handhelds. Mobile radios should have more coverage.

Before you leave the office, check to make sure your radio is working.

All personnel should check the coverage of those areas they intend to work or travel in to determine if the area has radio coverage and which repeater provides coverage for that area. They should also perform radio checks to verify that the area is in fact covered and that their radio is working properly once arriving at their destination.

	GROUP 25	GROUP 26		
CH	<b>Ft Howes</b>	<b>Rawlins</b>		
1	BLM Miles City Direct	BLM Fire 1 (Direct)		
2	BLM Fire 1 (Direct)	BLM Fire 2 (Direct)		
3	Custer NF RPT	BLM Fire 3 (Direct)		
4	Custer NF1	VFIRE 21		
5	VFIRE 21	BLM Crooks Rptr		
6	SOA 1	Bridger Peak Rptr		
7	RED (MT State Mutual Aid)	Jelm Mtn Rptr		
8	Orange	Gunny Sack Rptr		
9	Air-to-Ground 13	Carbon County Dispatch		
10	Air-To-Ground 91	Air-To-Ground 10		
11	Powder River	Air-To-Ground 15		
12	Rosebud Co Direct	BLM Whiskey		
13	VMED 28	BLM Elk		
14	BLM Fire 1 (Direct)	BLM Flattop Mountain		
15	BLM Fire 2 (Direct)	VFIRE21		
16	BLM Fire 3 (Direct)	VMED28		

# Repeater Pick List

Sheridan		
Call List No.	Tone	Repeater
7	167.9	Dome Pk
6	156.7	Dry Fork
8	103.5	NE Portable
Greybull		
Call List No.	Tone	Repeater
2	123	Shell Rim
6	156.7	Med Mtn
4	136.5	Paintrock
8	103.5	NE Portable
Buffalo		
Call List No.	Tone	Repeater
3	131.8	Hunter Mesa
16	192.8	Sheep Mtn
10	107.2	Brokenback
8	103.5	South Portable

## INTRODUCTION

The radio system is an FM, VHF 2-way radio communications system operating in the 154-174 Mhz band, is narrow band, and operates in analog mode. The system consists of multi-channel **portable and mobile radios, base stations, and repeaters**. This radio system operates within the "line-of-site" principle. The picture below illustrates this principle. If a user is standing at **Point A** and wants to talk to a user at **Point B**, they will be unable to do so on a net or work frequency because of the mountains between them. They must communicate by utilizing a repeater that is above Points A and B, such as **Point C**.

**Handhelds = Portable radios. Trucks/Work Centers = Mobile radios.**

**Offices = Base Stations. Repeaters = on Mtn top.**

**Portable Repeaters = Deployable for projects, fires.**

**Customer Help Desk (for repair ticket) by calling (866) 945-1354**

**Priority for use is *EMERGENCY/SAFETY, FIRE*, then Administrative.**

### When transmitting:

- Listen for traffic and allow conversation to finish prior to use.
- Speak clearly and at a normal voice level.
- Do not use foul language or any inappropriate comments over the air.
- Keep transmissions brief and to the point. Break longer transmissions up.

**Remember – any conversations over the air can be monitored and are being recorded by the base stations at the offices. *Point A***



**Point B**

**Point C**

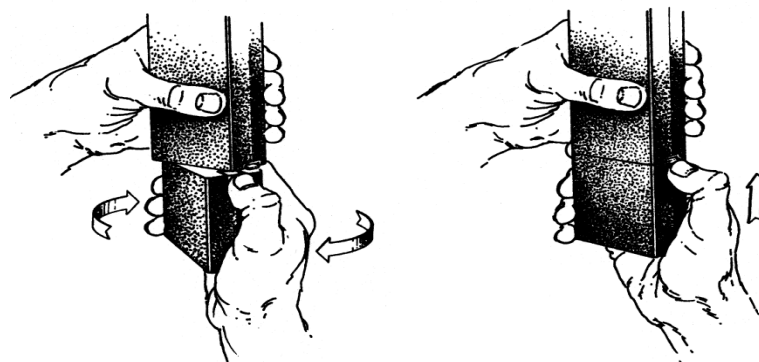
	Group 21	GROUP 22	GROUP 23	Group 24
C H	Search and Rescue	BLM Worland	Casper	Crook/Weston
1	Big Horn Co Med Mtn Rptr	VFIRE 21	VFIRE 21	BLM Fire 1 (Direct)
2	Big Horn Co Black Mtn Rptr	Scene	Scene	BLM Warren Peak
3	Big Horn Co Portable Rptr	BLM Black Mountain Rptr	CMBEL North	Weston Rptr
4	Big Horn Co Tac	BLM Cedar Mountain Rptr	CMBEL Fire	BLM Newcastle Hill
5	National SAR Tac	BLM Copper Mountain Rptr	BLM Pumpkin Butter RPTR	Crook County TAC
6	MT State Mut Aid - Red	BLM Limestone Rptr	BLM Warren Peak	VFIRE 21
7	Johnson Co Tac	BLM Crooks Rptr	BLM Laramie Peak Rptr	Black Hills Fire TAC
8	Johnson Co Hunter Rptr	Big Horn Co Black Mtn Rptr	BLM Casper Mtn	NZ BKF RPT
9	Johnson Co Kaycee Rptr	Big Horn County FPD2 (Med Mtn Rptr)	BLM Hunter Mesa RPTR	Weston TAC
10	Johnson Co Airport Rptr	Worland Fire	BLM Buffalo Hill	Crook County RPT
11	Johnson Co Portable Rptr	Tensleep VFD	BLM Newcastle Hill	Air-To-Ground 24
12	Washakie Co Meadowlark Rp	Sheridan Co SAR Little Goose	BLM North Campbell	Air-To-Ground 25
13	Sheridan Co Little Goose Rp	Thermopolis TAC1	Johnson County Fire TAC1	Air-To-Ground 35
14	Work 1 (Direct)	BLM Fire 1 (Direct)	BLM Fire 1 (Direct)	BLM Fire 1 (Direct)
15	VFIRE 21	BLM Fire 2 (Direct)	BLM Fire 2 (Direct)	BLM Fire 2 (Direct)
16	VMED 28	BLM Fire 3 (Direct)	BLM Fire 3 (Direct)	BLM Fire 3 (Direct)

	GROUP 17	GROUP 18	GROUP 19	Group 20
CH	New Northest I/A	New Northwest I/A	New Southwest I/A	NEW Southeast I/A
1	Sheridan (Dir)	Greybull (Dir)	Greybull (Dir)	Buffalo (Dir)
2	Sheridan Rptrs (Tone Select)	Greybull Rptrs (Tone Select)	Greybull Rptrs (Tone Select)	Buffalo Rptrs (Tone Select)
3	Greybull Rptrs (Tone Select)	Sheridan Rptrs (Tone Select)	Buffalo Rptrs (Tone Select)	Sheridan Rptrs (Tone Select)
4	Bighorn Fire TAC	Bighorn Fire TAC	Bighorn Fire TAC	Bighorn Fire TAC
5	R2 Fire TAC	R2 Fire TAC	R2 Fire TAC	R2 Fire TAC
6	Work 1	BLM West Rptrs (Tone Select)	BLM West Rptrs (Tone Select)	BLM East Rptrs (Tone Select)
7	Work 2	BLM Fire 1 (Dir)	BLM Fire 1 (Dir)	BLM Fire 1 (Dir)
8	Sheridan Co VFD Fire Board Rptr	BLM Fire 2 (Dir)	BLM Fire 3 (Dir)	BLM Fire 3 (Dir)
9	Sheridan Co VFD Dispatch Rptr	NPS-WAPA North Rptr	Shoshone NF Wood Ridge Rptr	Johnson Cnty Windy Rptr
10	Dayton VFD Fire TAC	NPS-Medicine Mtn Rptr	Big Horn Co SAR Black Mtn Rptr	Johnson Cnty Floyd Rptr
11	Bighorn VFD Fire TAC	Big Horn Cnty FPD1 (Lovell)	Worland Fire	Johnson Cnty Fire TAC1
12	Story VFD Fire TAC	Big Horn Cnty Fire TAC	Tensleep VFD	Story VFD TAC
13	VFIRE 21	VFIRE 21	VFIRE 21	VFIRE 21
14	Air-To-Ground 14	Air-To-Ground 14	Air-To-Ground 14	Air-To-Ground 14
15	Air-To-Ground 62	Air-To-Ground 62	Air-To-Ground 62	Air-To-Ground 62
16	AIRGUARD	AIRGUARD	AIRGUARD	AIRGUARD

## MISCELLANEOUS

### Portable Radio Batteries (GPH, DPH):

- To remove the battery, turn the radio off. Press up the metal tab on the side of the case while twisting the battery pack counter clockwise approximately 30° and remove it from the radio.
- To reinstall the battery, locate the center hub on the base of the radio and place it in the recesses of the battery pack. Position the pack at the 30° offset, seating two metal studs in their recess. Apply upward pressure to the pack while twisting the pack clockwise to its original position. The metal tab will click, locking the pack in position.
- King battery packs are available in a variety of sizes and types for special applications. Rechargeable packs can be charged separately or while attached to a radio.
- Periodically check the contacts on battery packs for dirt that may prevent a good electrical contact with the charging base.
- Do not dispose of a battery pack in fire. An explosion may occur.
- When using clamshell battery packs, the clamshell can only hold 9 AA batteries and a shorting bar in the 10th slot. NEVER remove the shorting bar.**



### Nicad Battery Maintenance

- Nicad batteries should always be ran completely down before putting them in a charger or they will build a memory and not fully charge over time (leave them turned on overnight with the squelch turned up and the volume very low).
- Nicad batteries should be conditioned once every couple of months. This takes roughly 12 hours per battery. On the conditioner, make sure the battery is coming back with **10+ Volts** and **80% of the rated Amps** (on the bottom of the battery).

## P25 Digital Radio's vs. Narrowband Radios

Currently our repeaters are unable to perform digital communications. In 2018 the Bighorn will get a P25 Codan module replacement in our existing repeaters making them capable of digital transmission. Due to the fact Relm GMH5992 mobiles in most vehicles are incapable of P25 communication. These radio's will need to be replaced as Forest funding becomes available. They will work fine for the time being.

The antiquated GPH5102 radio's are also not able to go digital. That is why they are slowly getting phased out with the Relm KNG radio's. Current programming on the KNG radio's is in analog mode only. They are easily programmable to perform single or multichannel digital communication in conjunction with analog programming.

Since all of our County, Federal, and State Cooperators also are narrow banded we will have no problems communicating with them. BLM and BIA have already started their digital transition. KNG radio's that are being purchased will not perform any kind of WYOLink or trunking. CIO is purchasing the cheaper KNG Radio version because we do not use those very expensive WYOLink and trunking functions.

### WYOLink State Digital Trunking System

In 2006, the State of Wyoming decided to implement a statewide radio system that all City, County, State, and Federal agencies could utilize. They decided on a **VHF digital trunking system**. This system is designed around 100 Watt mobile communications.

- **City Police Departments** most of these within the State have converted to this system.
- **County Sheriff Departments** are not converting to this system as quickly because of cost of radio equipment, fees for using the system, and problems with talking to Federal agencies that are not converting to this system.
- **County Fire Districts** are also very slow at converting to this system. Part of the problem is when they work with Federal agencies on FS land as an example, the coverage from the WYOLink system does not work for 2.0 watt handhelds, and a lot of the areas they are working, they have to use a handheld radio.
- **FS LE&I** some of the LE&I vehicles have the WYOLink mobiles installed, but a FS King radio is also being used due to issues with scanning between WYOLink and FS, NPS, BIA, and County analog narrowband systems.

	GROUP 13	GROUP 14	GROUP 15	GROUP 14
CH	CUSTER NF	NOAA WTHX & A-to-G	Incident Cloning	New Group 1
1	Custer Direct	NOAA 1		Sheridan Direct
2	Dryhead Repeater (RED)	NOAA 2		Sheridan Rptrs (Tone Select)
3	Iron Mountain Repeater (RED)	NOAA 3		Greybull Direct
4	Shane Ridge Repeater (RED)	NOAA 4		Greybull Rptrs (Tone Select)
5	Home Creek Repeater (ASH)	Common Use 1 (Travel Use)		Buffalo Direct
6	Liscom Butte Repeater (ASH)	Common Use 2 (Travel Use)		Buffalo Rptrs (Tone Select)
7	Poker Jim Repeater (ASH)	Air-to-Ground 10		Work 1
8	Stag Rock Repeater (ASH)	Air-to-Ground 12		Work 2
9	BLM Miles City South	Air-to-Ground 13		VMED 28
10	BLM Diamond Butte Repeater	Air-to-Ground 14		Sheridan Co SO Little Goose
11	BLM Home Creek Repeater	Air-to-Ground 15		Big Horn Co FPD2 Med Mtn
12	BLM Poker Jim Repeater	Air-to-Ground 31		Big Horn Co SAR Black Mtn
13	BLM Tripoint Repeater	Air-to-Ground 35		Washaki Co Sheriff
14	BLM SOA 1 (Miles City)	Air-to-Ground 62		Johnson Co Sheriff (Windy)
15	Red (MT State Mutual Aid)	Flight Following		Wyo Game&Fish
16	MT-04W A/G 52	Air Guard		Wyo State Mut Aid

	GROUP 9	GROUP 10	GROUP 11	GROUP 12
CH	<b>STORY IA</b>	<b>BLACK HILLS NF</b>	<b>SHOSHONE NF</b>	<b>MED BOW NF SOUTH&amp;TBNG</b>
1	NE Direct (Sheridan)	Warren Peak Repeater	Dead Indian Repeater	SE Direct (Laramie)
2	Dome Peak Repeater	Terry Peak Repeater	Meadow Lake Repeater	Pole Mtn Repeater
3	South Direct (Buffalo)	NZ Custer Pk Repeater	Clayton Repeater	Spruce Mtn Repeater
4	Hunter Mesa Repeater	CZ Custer Pk Repeater	Carter Mtn Repeater	Jelm Mtn Repeater
5	BLM Hunter Mesa Rpt	Seth Bullock Repeater	Wood Ridge Repeater	SW Direct (Saratoga)
6	Johnson Cnty Fire Windy (R)	Mt Rushmore Repeater	Sunlight Repeater	Kennaday Peak Repeater
7	Bighorn Fire TAC	CZ Bear Mtn Repeater	Bear Tooth Repeater	Blackhall Repeater
8	BLM Fire 1 (Direct)	SZ Bear Mtn Repeater	Lava Mtn Repeater	Bridger Peak Repeater
9	VFIRE 21 (old FERN)	Cicero Peak Repeater	WR Black Mtn Repeater	Warren Peak Repeater
10	Johnson Co (N) Fire TAC	Elk Mtn Repeater	Windy Ridge Repeater	Elk Mtn Repeater
11	Story VFD TAC	Ball Hill Repeater	Indian Ridge Repeater	Rochelle Hills Repeater
12	Sher Co VFD FireBoard Rpt	Work 1 (Direct)	Cyclone Pass Repeater	Black Mtn Repeater
13	Sher Co VFD Dispatch Rpt	Black Hills Fire TAC	South Pass Repeater	Cow Creek Mtn Repeater
14	Air-to-Ground 14	R2 Fire TAC	Blue Ridge Repeater	Gunny Sack Repeater
15	Air-to-Ground 62	Air-to-Ground 31	WK Black Mtn Repeater	Work 1
16	Air Guard	Air-to-Ground 35	Shoshone Fire TAC	MedBow Fire TAC

**Programming Help:** If you need help with quick maintenance or other tips, the following employees (besides the radio technicians) are authorized to program radios.

**Med Wheel RD (Greybull)**

FIRE – **Marvin Matthiesen** (FMO)

FIRE – **Jon Stonelake** (AFMO)

FIRE – E641

**Joe Bocek**(Engine Captain), Brent Lytle (Assistant)

**Wyoming IHC**

SUPERINTENDENT **Matt Prentiss**

ASS'T SUPERINTENDENT **Eric Levy**

**Tongue RD & S.O. (Sheridan)**

FIRE – **Jon Warder** (FFMO/Safety)

FIRE – **Kevin Hillard** (FMO)

FIRE – E611

**Janos Czaban** (Engine Captain)

**Pete Solin** (Asst Captain)

FIRE – E661

**Ryan Joseph**(Engine Captain)

**Mike Solarz** (Asst Captain)

**Powder River RD (Buffalo)**

Resources – **Brian Boden** Recreation

FIRE – **Curtis Rasmuson** (FMO)

FIRE – Black Tooth Module

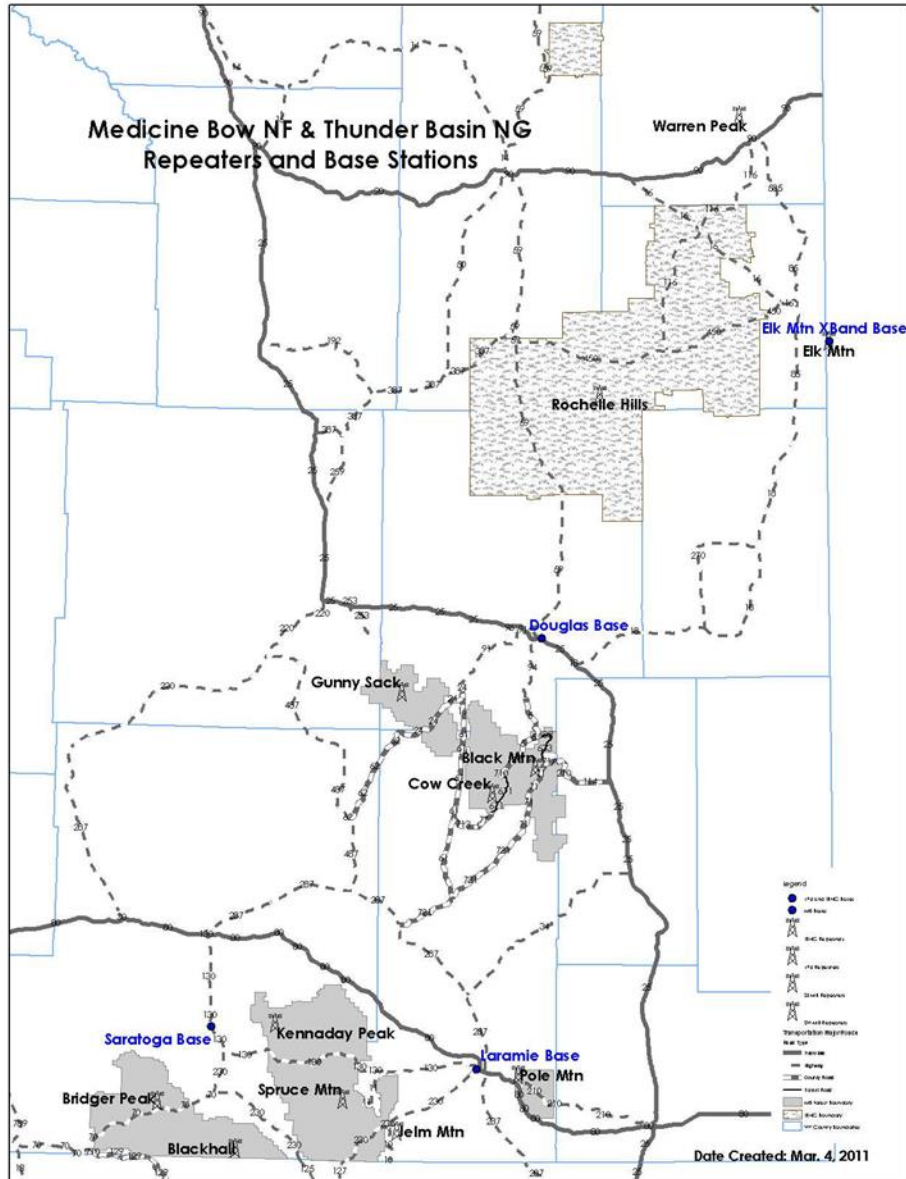
**Matt Heinz** (Engine Captain)

Sean Riesenberg (Asst Captain)

**NOTE: The authority to program radios on the Bighorn NF does not extend past the boundaries of the Forest. If you are going to an Incident, see the Communications Unit at the Incident to have your radio cloned with the proper frequencies.**

# Neighboring NZ7 Forests **Medicine Bow NF & Thunder Basin NG**

Repeaters and Bases

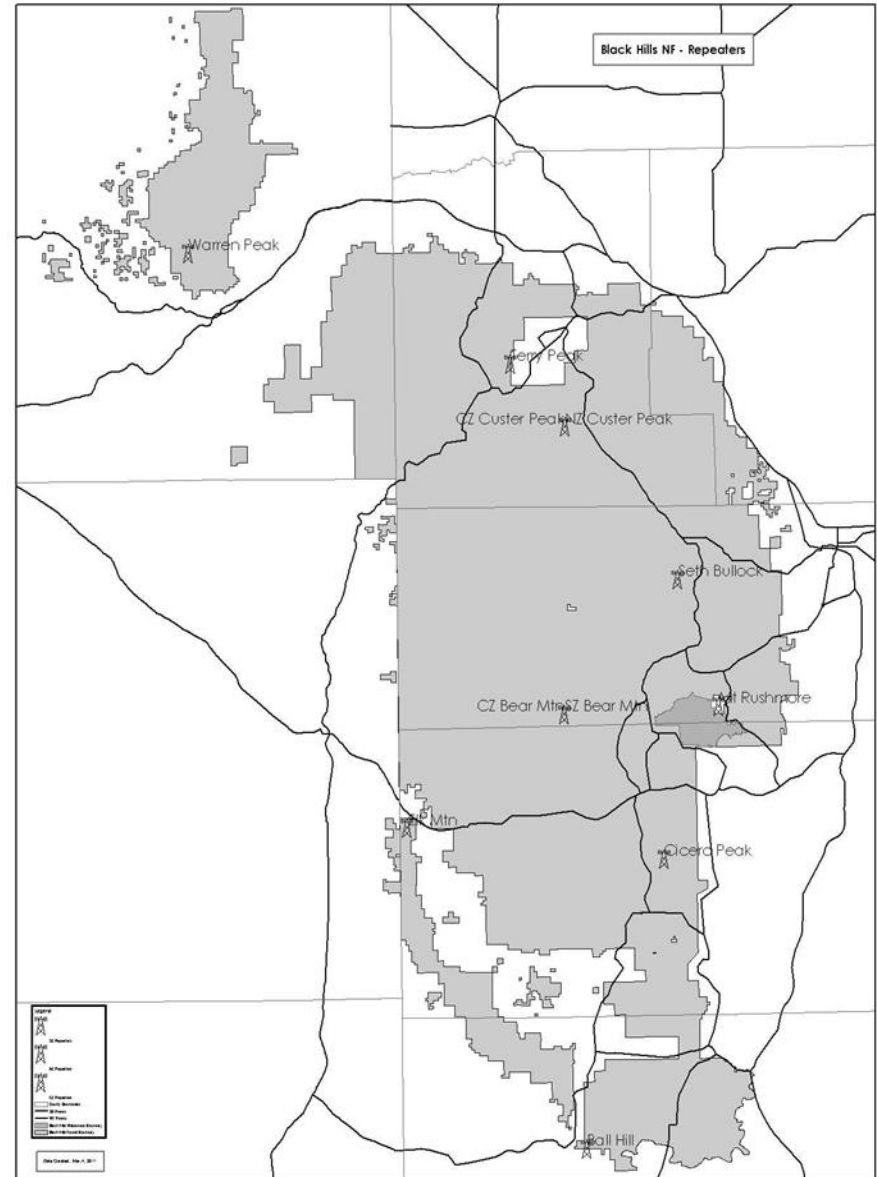


	GROUP 5	GROUP 6	GROUP 7	GROUP 8
CH	<b>NORTHWEST I/A</b>	<b>SOUTHEAST I/A</b>	<b>SOUTHWEST I/A</b>	<b>CROW AG BIA I/A</b>
1	NW Direct (Greybull)	South Direct (Buffalo)	South Direct (Buffalo)	NE Direct (Sheridan)
2	Shell Rim Repeater	Hunter Mesa Repeater	Brokenback Repeater	Dome Peak Repeater
3	Medicine Mtn Repeater	Sheep Mtn Repeater	South Portable Repeater	Dry Fork Repeater
4	Paintrock Repeater	South Portable Repeater	Paintrock Rptr	NE Portable Repeater
5	Dome Peak Repeater	Air-to-Ground 14	Air-to-Ground 14	NW Direct (Lovell)
6	Dome Peak Repeater	Air-to-Ground 62	Air-to-Ground 62	Medicine Mtn Repeater
7	Air-to-Ground 14	Bighorn Fire TAC	Bighorn Fire TAC	NW Portable Repeater
8	Air-to-Ground 62	BLM Fire 3 (Direct)	BLM Fire 3 (Direct)	BIA Fire Net 1 (Direct)
9	Bighorn Fire TAC	BLM Fire 1 (Direct)	BLM Fire 1 (Direct)	BIA Pryor Mtn Repeater
10	NPS WAPA (N) Repeater	VFIRE21	BLM Copper Mtn Rpt	BIA Wolf Mtn Repeater
11	NPS Medicine Mtn Repeater	BLM Pumpkin Butte Repeater	Woodridge Rpt (Shoshone NF)	FS Portable RAWs Station
12	BLM Fire 1 (Direct)	BLM Hunter Mesa Repeater	VFIRE21	Air-to-Ground 14
13	BLM Black Mtn Repeater	Johnson Cnty Fire Windy (R)	Bighorn County FPD1 Rpt	Air-to-Ground 62
14	Big Horn Cnty Fire Tac	Johnson Cnty Fire Floyd (R)	Worland Fire	R2 Fire TAC
15	Big Horn Cnty FPD1 (R)	Johnson Cnty Fire Tac 1	Tensleep VFD	Air-to-Ground 52 (MT-08W)
16	Air Guard	Air Guard	Air Guard	Air Guard

	GROUP 1	GROUP 2	GROUP 3	GROUP 4
CH	<b>BIGHORN</b>	<b>NORTH RESOURCE</b>	<b>SOUTH RESOURCE</b>	<b>NORTHEAST I/A</b>
1	NE Direct (Sheridan)	NE Direct (Sheridan)	S Direct (Buffalo)	NE Direct (Sheridan)
2	Dome Peak Repeater	Dome Peak Repeater	Hunter Mesa Repeater	Dome Peak Repeater
3	Dry Fork Repeater	Dry Fork Repeater	Sheep Mtn Repeater	Dry Fork Repeater
4	NE Portable Repeater	NE Portable Repeater	Brokenback Repeater	NE Portable Repeater
5	S Direct (Buffalo)	NW Direct (Lovell)	S Portable Repeater	Medicine Mtn Repeater
6	Hunter Mesa Repeater	Shell Rim Repeater	Work 1 (D)	Air-to-Ground 14
7	Sheep Mtn Repeater	Medicine Mtn Repeater	National SAR	Air-to-Ground 62
8	Brokenback Repeater	Paintrock Rptr	VMed28	Bighorn Fire TAC
9	S Portable Repeater	Work 1 (D)	Johnson Cnty Sheriff (Windy)	R2 Fire TAC
10	NW Direct (Lovell)	VMed 28	Johnson Cnty Sheriff (Floyd)	BLM Fire 3 (D)
11	Shell Rim Repeater	Sheridan Cnty Sheriff (R)	Washakie Cnty Sheriff (R)	Sheridan VFD Fire Board (R)
12	Medicine Mtn Repeater	Big Horn Cnty Sheriff (D)	Big Horn Cnty Sheriff (D)	Sheridan VFD Dispatch (R)
13	Paintrock Rptr	Big Horn Cnty Med Mtn	BLM Hunter Mesa (R)	Johnson VFD Windy Rdg (R)
14	NW Portable Rptr	Bighorn Cnty Black Mtn Rptr	Shoshone Wood Ridge (R)	VFIRE 21 (old FERN)
15	Work 1 (D)	Wyoming G&F (D)	Wyoming G&F (D)	BIA Crow Agency Fire Net 1
16	Work 2 (D)	Wyoming State Mut Aid (EO)	Wyoming State Mut Aid (EO)	Air Guard

## Neighboring NZ6 Forests **Black Hills NF**

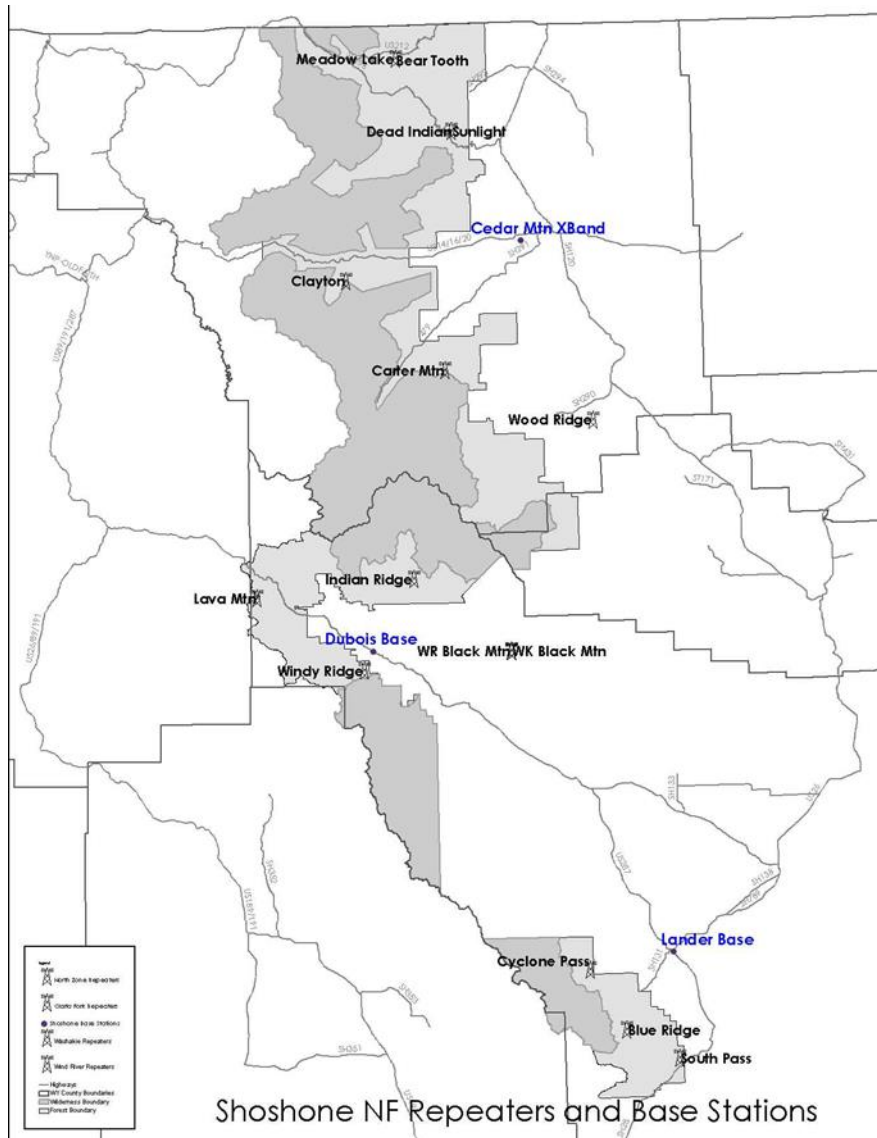
Repeaters and Bases



## Neighboring NZ7 Forests

### Shoshone NF

Repeaters and Bases



## PHONETIC ALPHABET

A	ALPHA
B	BRAVO
C	CHARLIE
D	DELTA
E	ECHO
F	FOXTROT
G	GOLF
H	HOTEL
I	INDIA
J	JULIETT
K	KILO
L	LIMA
M	MIKE
N	NOVEMBER
O	OSCAR
P	PAPA
Q	QUEBEC
R	ROMEO
S	SIERRA
T	TANGO
U	UNIFORM
V	VICTOR
W	WHISKEY
X	X RAY
Y	YANKEE
Z	ZULU

MEDICAL PLAN (ICS 206 WF)

Controlled Unclassified Information//Basic

Medical Incident Report

FOR A NON-EMERGENCY INCIDENT, WORK THROUGH CHAIN OF COMMAND TO REPORT AND TRANSPORT INJURED PERSONNEL AS NECESSARY.

FOR A MEDICAL EMERGENCY: IDENTIFY ON SCENE INCIDENT COMMANDER BY NAME AND POSITION AND ANNOUNCE "MEDICAL EMERGENCY" TO INITIATE RESPONSE FROM IMT COMMUNICATIONS/DISPATCH.

Use the following items to communicate situation to communications/dispatch.

1. CONTACT COMMUNICATIONS / DISPATCH (Verify correct frequency prior to starting report)

Ex: "Communications, Div. Alpha, Stand-by for Emergency Traffic."

2. INCIDENT STATUS: Provide incident summary (including number of patients) and command structure.

Ex: "Communications, I have a Red priority patient, unconscious, struck by a falling tree. Requesting air ambulance to Forest Road 1 at (Lat./Long.) This will be the Trout Meadow Medical, IC is TFLD Jones. EMT Smith is providing medical care."

Severity of Emergency / Transport Priority	<input type="checkbox"/> RED / PRIORITY 1 Life or limb threatening injury or illness. Evacuation need is IMMEDIATE Ex: Unconscious, difficulty breathing, bleeding severely, 2" - 3" burns more than 4 palm sizes, heat stroke, disoriented. <input type="checkbox"/> YELLOW / PRIORITY 2 Serious injury or illness. Evacuation may be DELAYED if necessary. Ex: Significant trauma, unable to walk, 2" - 3" burns not more than 1-3 palm sizes. <input type="checkbox"/> GREEN / PRIORITY 3 Minor injury or illness. Non-Emergency transport Ex: Sprains, strains, minor heat-related illness.
Nature of Injury or Illness & Mechanism of Injury	Brief Summary of Injury or Illness (Ex: Unconscious, Struck by Falling Tree)
Transport Request	Air Ambulance / Short Haul/Hoist Ground Ambulance / Other
Patient Location	Descriptive Location & Lat. / Long. (WGS84)
Incident Name	Geographic Name + "Medical" (Ex: Trout Meadow Medical)
On-Scene Incident Commander	Name of on-scene IC of Incident within an Incident (Ex: TFLD Jones)
Patient Care	Name of Care Provider (Ex: EMT Smith)

3. INITIAL PATIENT ASSESSMENT: Complete this section for each patient as applicable (start with the most severe patient)

Patient Assessment: See IRPG page 106

Treatment:

4. TRANSPORT PLAN:

Evacuation Location (if different): (Descriptive Location (drop point, intersection, etc.) or Lat. / Long.) Patient's ETA to Evacuation Location:

Helispot / Extraction Site Size and Hazards:

5. ADDITIONAL RESOURCES / EQUIPMENT NEEDS:

Example: Paramedic/EMT, Crews, Immobilization Devices, AED, Oxygen, Trauma Bag, IV/Fluid(s), Splints, Rope rescue, Wheeled litter, HAZMAT, Extrication

6. COMMUNICATIONS: Identify State Air/Ground EMS Frequencies and Hospital Contacts as applicable

Function	Channel Name/Number	Receive (RX)	Tone/NAC *	Transmit (TX)	Tone/NAC *
COMMAND					
AIR-TO-GRND					
TACTICAL					

7. CONTINGENCY: Considerations: If primary options fail, what actions can be implemented in conjunction with primary evacuation method? Be thinking ahead.

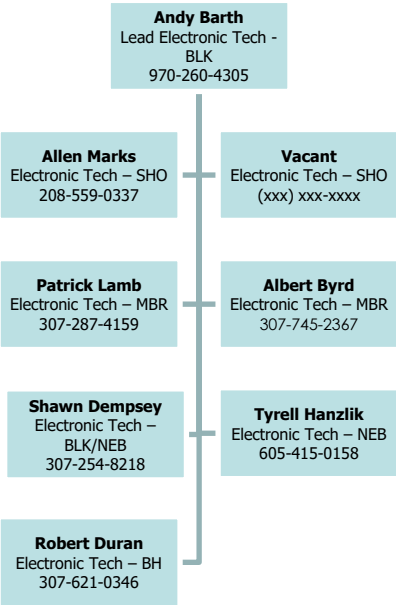
8. ADDITIONAL INFORMATION: Updates/Changes, etc.

REMEMBER: Confirm ETA's of resources ordered. Act according to your level of training. Be Alert. Keep Calm. Think Clearly. Act Decisively.

ISO Organization Chart

Northern Service Area  
Zone 6 & 7

(Shoshone, Bighorn, Medicine Bow  
NF/Thunder Basin NG, Black Hills, &  
Nebraska NFs, and Dakota Prairie  
Grasslands)

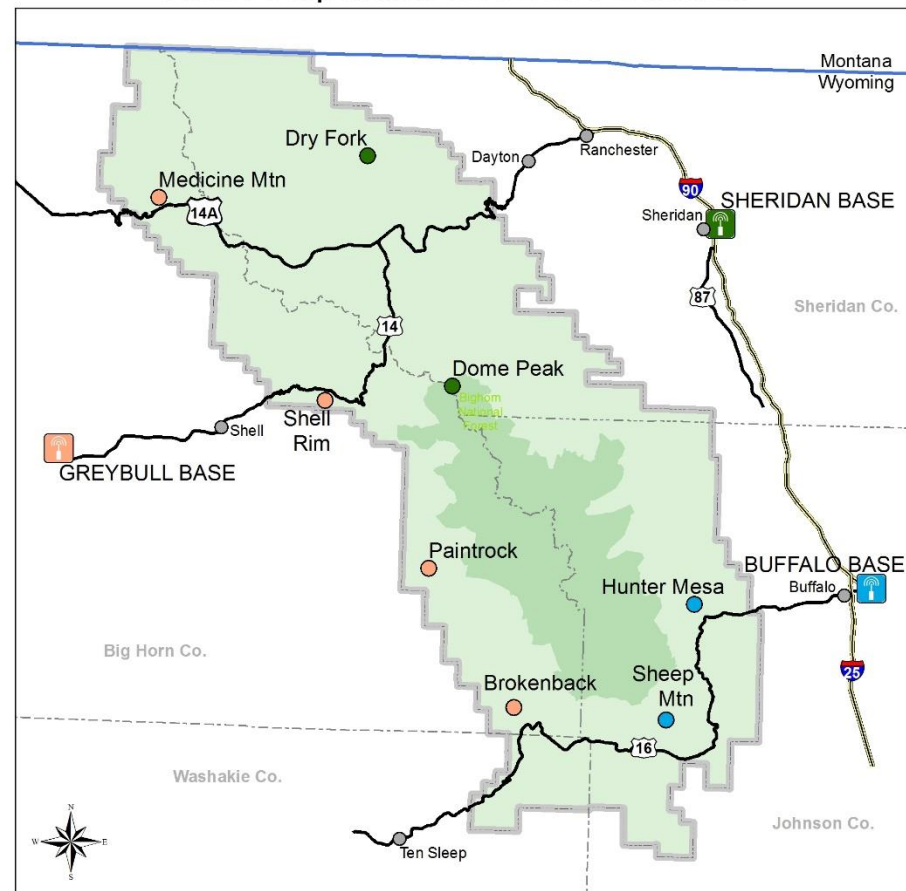


# 2021 BIGHORN NF EMERGENCY CONTACT PHONE NUMBERS

OFFICE	NAME	OFFICE	HOME
Tongue/Supervisor's Office Front Desk (307) 674-2600	Andrew Johnson (Forest Supervisor)	(307) 674-2612	(307) 752-4782
Medicine Wheel RD Front Desk (307) 765-4435	Brandon Houck (District Ranger)	(307) 548-5301	TBD c
Tongue RD Front Desk (307) 674-2600	Amy Ormseth (District Ranger)	(307) 674-2680	(307) 351-0423 (307) 429-8281
Powder River RD Front Desk (307) 684-7806	Traci Weaver (District Ranger)	(307) 684-4625	(307) 620-1075 (307) 690-5433
SO Resources	Thad Berrett (Detail)	(307) 674-2685	(307) 461-2230
SO Public Information Officer	Sara Evans Kirol	(307) 674-2692	(307) 683-7019
SO Recreation / Lands	Andrea Maichak Out	(307) 674-2636	(307) 752-2798
SO Engineering	Jason Ruybal	(307) 674-2615	(970) 222-0539
SO Administration	Kim Albea	(307) 674-2648	(307) 752-7337
<b>FOREST SERVICE LAW ENFORCEMENT</b>			
FS LEO (Buffalo) FS13	Forrest Tellock	(307) 684-4639	(307) 751-1975
FS LEO (Sheridan) FS10	Dave Hartley, Captain	(307) 674-2682	(307) 683-7060
FS LEO (Sheridan) FS14	Jeremy Mack	(307) 674-2658	(307) 752-0720
<b>FOREST FMO/SAFETY OFFICER</b>			
Forest Safety Officer & FMO	Jon Warder	(307) 674-2631	(307) 752-2614
<b>CODY INTERAGENCY DISPATCH CENTER – 24 hr</b>			
Katie, Travis, Hal & Gang & 24 hr. Ans. Svc	7 days/wk July-Sept.	(307) 578-5740	(800) 295-9954
<b>COUNTY SHERIFF AND EMERGENCY 911 (Ambulance, Search &amp; Rescue, Law Enforcement, etc.)</b>			
Sheridan County		(307) 672-3453	672-7293 fax
Johnson County		(307) 684-5581	684-5585 fax
Big Horn County		(307) 568-2035	568-2312 fax
Washakie County		(307) 347-2242	347-6110 fax
<b>SALECS – WY Central Law Enforcement Dispatch (800) 442-2767</b>			
<b>WY State Mutual Aid Frequency 154.875 for Life Flight, SAR, LEI Group 2, Ch. 16</b>			
<b>WY Wildland Fire Incidents Use VMed 28 for Life Flight 155.3400 TXCG 156.7 Group 2, Ch. 16</b>			
<b>To Call Bighorn NF Satellite Phones Dial 480-768-2500 then Sat #</b>			
<b>AREA MEDICAL FACILITIES</b>			
Johnson County Hospital – Buffalo L5	(307) 684-5521	(307) 684-5385 fax	684-2228 COVII
Sheridan County Hospital –Sheridan L3	(307) 672-1000	(307) 672-1112 fax	672-1004 COVII
Washakie County Hospital–Worland L4	(307) 347-3221	(307) 347-6971 fax	“Clinic” from M
North Big Horn Hospital – Lovell L5	(307) 548-5200	(307) 548-5205 fax	548-5201 COVII
Midway Clinic – Basin/Greybull L5	(307) 568-3311	(307) 568-2139 fax	“Clinic” for COV
West Park Hospital – Cody L3	(307) 527-7501	(307) 578-2289 fax	578-2015 COVII
Wyoming Medical Center – Casper L2	(307) 577-7201	(307) 577-7862 fax	No special COV
St. Vincent’s Healthcare – Billings L2	(406) 657-7000	(406) 237-4125 fax	“Health Access” f
Poison Control Center		(800) 222-1222	COVID
<b>AIR AMBULANCE NUMBERS</b>			
Billings (800) 538-4357	Casper (800) 806-9158	Riverton (800) 444-9223	Cody (800) 525-5220

# 2021 Bighorn NF Radio User's Guide

## Bighorn National Forest Radio Repeaters and Base Stations



### Radio Base Site

- Buffalo Base
- Greybull Base
- Sheridan Base

### Radio Repeater Site

- Buffalo Repeaters
- Greybull Repeaters
- Sheridan Repeaters

- City/Town
- Interstate
- US Route
- Cloud Peak Wilderness
- Bighorn National Forest Boundary